Freezing Air for Hot Homes

Cooling by electric power from ordinary electric-light wires looks like the real hope. Yet another of the new summer comforts is found in all the various schemes that are being attempted all over the world. Best known is the simple device rigged up by Professor Alexander Graham Bell in his home on Connecticut Avenue in Washington. He adapted a swimming pool in the basement for his summer study. The pool was drained, and then fitted up with rugs and chairs, so as to be comfortable. In another part of the basement air from the outside was drawn in by a fan, passed over cakes of ice, and then forced through a metal duct to the swimming pool. Cold air sinks; and so the tiled basin soon filled with cool air, the watertight sides preventing the fresh cool air from escaping. As the air warmed it rose and escaped, more cool air taking its place.

J. W. Meares, electrical adviser to the government of India, has just perfected an improvement over some of the oldtime cooling systems used there. A common method was to run a blackened ventilating pipe high up in the sunlight over a house to create a draft, and so draw the hot air from the rooms. Another has been to cool the air by passing it through screens of falling water. His idea is to build all houses with hollow walls and hollow ceilings, through which fresh air would be forced by fans, changing all the air in the walls at least once a minute. The incoming air he would cool by water or by refrigeration plants.

Textile mills in warm climates usually provide cooling for some of the rooms; the proportion of moisture in the air must be controlled, and a Swiss spinning mill solved this problem last summer by piping a cool mountain spring down to the mill and pouring the water over the roof.

Cold from a central station, as gas and electricity are now supplied, has long been a prediction of future luxury. The municipal artist of Paris, Eugene Henard, at the town-planning conference in Paris last winter predicted that refrigeration will be supplied to houses in the form of liquid air from the central station.

In hotels cooling is a big success. In the reception and dining rooms of the Auditorium Hotel, in Chicago, the air is cooled in the summer to an average of fourteen degrees lower than the outside air. Fourteen degrees may not sound much, but it feels a lot. In The Man Who Would Be King, Kipling tells of that hour just before dawn when the temperature drops to eighty and a man can sleep so soundly that the heat will not awaken him for several hours.

The cost of cooling five hundred thousand cubic feet of space in the Auditorium has averaged twenty dollars a day, not including interest and depreciation on the investment in the plant. At that rate the cooling of the air in a good six-room apartment would not cost over thirty or forty cents a day, exclusive of the interest and depreciation of the plant. It would actually cost much more than that for the apartment house would have neither the advantages of low power costs nor the saving due to a large operation. Yet the figures do give hope that the cost question can be solved.

In the Ritz-Carlton, in New York, the winter-heating system is partly used for the summer-cooling system. Each room has a register at the floor level and one at the ceiling level. In the winter warm air comes into the room at the ceiling, and as it cools it drops and finally passes out through the floor register. In summer the current is reversed. Cold air comes in through the floor-level register, rises as it warms and then passes out again through the ceiling-level cool air register. All the air in a room can be changed every six minutes. This cool air comes into the hotel through an air-washer, which cleans it with a water-spray. In the airwasher are located refrigeration pipes, which cool the air as it is being washed. Very similar methods are used by other hotels and by the New York Stock Exchange.

Water—preferably cool—and power of some sort are the only daily requirements of most refrigerating systems. The principles are simple, though the machinery is not. When air is compressed it becomes hot which explains the heat developed in pumping up an automobile tire. After a while the air will cool off to the same temperature as the surrounding air, but it remains compressed. Then if it is allowed to expand it will take heat from everything near—or, in other words, will cool everything round it.

Most plants use ammonia as the element to be compressed, though there are many others. Is is for the compressing of the ammonia that power is needed, and here it is that the electric companies get their business. The compressed ammonia, now hot, has to be cooled. The ordinary method is to run it in pipes up to the roof, if it is a large plant, and let the outside air cool the pipes.

The air, however, needs a little help to do the work; so water from a deep well or from city mains is allowed to drip over the pipes. This cools the compressed ammonia and it is ready to do its work.

The ammonia is then led in pipes to the place where cooling is required; and, still in pipecoils, it is allowed to expand. Immediately the coils become cold. The same ammonia then goes back to the compressor and makes the trip all over again. For various reasons, in most of the plants it is not desired to take the cold direct from the ammonia coils; so the coils are placed in vats of brine and cool the brine. The brine is then pumped through pipes in the refrigerator and cools the air. An advantage of this system, which would be of value for a home-cooling plant, is that the brine will stay cold for many hours; so, if enough brine is cooled, the cold can be stored up, like electricity in the storage battery, and used to do the cooling work while the compressor stops work for hours at a time—or even all night.

All these operations have now been combined in automatic control. One small refrigerator system need only be connected with an electric-light socket and with a small pipe from the city water supply, and it will run for months at a time. It looks as if it were possible to add to this device an apparatus for cooling air and sending it into a room. This may be one way of home cooling for one room will be furnished. Such a cooler could be easily inclosed in a cabinet the size of a small bookcase. A cousin to such a cooler is now a common sight—the electric ozonizer, which uses the electric current to manufacture ozone in a small cabinet and blow it into a room for ventilation.—Saturday Evening Post.

"My old barber has left the city."

"You seem very regretful."

"Yes; he had been trying to sell me a bottle of hair tonic for the past fifteen years, and so far I have succeeded in standing him off. Now I shall have to start the battle all over with a new man."

IT HAPPENED IN TEXAS.

In a Texas town there lives an old negress, Aunt Cynthia Johnson, who is sharp of tongue and seldom at peace with her female neighbors. Recently, as a result of a war of words with one of her neighbors, she was being tried in the Recorder's Court for disturbance. She had refused the court's offer of an attorney, and was conducting her own case. Her main line of defense was an attempt to prove a good character and a reputation for peace. She had put several of her church brothers and sisters on the stand, and had made a fairly good case, when old Uncle Levi Criggle was called to the witness stand and the following ensued:

"Brother Criggle, how long have you lived in my part of town and knowed me?"

"'Bout ten years, Sister Johnson."

"Brother Criggle, has you ever knowed of me startin' any exturbance among my neighbors or in my neighborhood where I live?"

"Now, Sister Johnson, the jedge over thar done made me hold up my han' and swar to tell the truth and all the truth, and I's boun' to tell it jess like it is. All I got to say 'bout that is, I ain't never hearn that you exactly started any insturbance, but all the insturbances that's ever been down in that end of town has had you in 'em somewhar afore they wus thru'."—Chicago Record-Herald.

WHAT HE REALLY NEEDED.

A young man very fond of the girls, but very cautious as to his dealings with them, recently went to a poetical friend and asked him if he would help get up a birthday sonnet to a certain young lady.

"Well," said the poet friend, "what do you want me to say?"

"Why, you ought to know about what's the proper thing," said the young man. "Something rather tender, but at the same time, remember, I don't want to commit myself in any way."

"Well," said the poet, "you don't want a poet to draw up your birthday verse. You want a lawyer."—Ladies' Home Journal.

DISQUALIFIED.

Mrs. M'Carty: An' phwat does your son Teddy be doin' now, Mrs. Flynn?

Mrs. Flynn: He's doin' tolme, Mrs. McCarty; but it's not his fault that he's a pickpocket, poor bye: They won't let him on th' perleece foorce on account of his lungs.—Puck.

A GOOD EXCUSE.

"Now, then," demanded Luschman's wife the next morning, "what's your excuse for coming home in that condition last night?"

"Well, to tell you the truth, m' dear," he replieed, "none of the hotels would take me in."—Philadelphia Press.

ITS IDENTITY.

Mr. Eaton: Are you sure the fish you sold me yesterday was a shad?

Fish Peddler: Of course I am! What did you think it was?

Mr. Eaton: I suspected it was a porcupine turned wrong side out.—Puck.